DOCUMENT RESUME

ED 396 286 CS 215 258

AUTHOR Donoghue, Mildred R.
TITLE Literature Connections in Six Current Math Series for Grades K-2.
PUB DATE 96
NOTE 7p.; Paper presented at the Annual West Coast Literacy Conference (Anaheim, CA, March 1, 1996).
PUB TYPE Speeches/Conference Papers (150) -- Reference Materials - Bibliographies (131) -- Guides - Classroom Use - Teaching Guides (For Teacher) (052)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Childrens Literature; Classroom Techniques; Instructional Effectiveness; Lesson Plans; *Mathematics Instruction; Primary Education; Standards; *Textbooks
IDENTIFIERS National Council of Teachers of Mathematics; *Trade Books

ABSTRACT

The National Council of Teachers of Mathematics Standard #2 (communicating aids students to clarify their thinking) emphasizes that reading, writing, discussing, and listening to mathematics are all vital parts of learning and using math. Six of the 12 math series chosen for California's elementary program list titles of children's trade books useful for supplementing lessons. A random selection of trade books listed in the six series was made to determine whether or not the book qualified as literature for classroom use. From this selection, a recommended literary book can be chosen for each of 12 different math topics for the early grades. A sample lesson plan could help integrate V. Williams' "A Chair for My Mother" into the second-grade math curriculum. Some literary selections from the primary grades can also be used for math lessons in the beginning intermediate classroom. (A 15-item bibliography of children's books cited and a 6-item bibliography of current professional books are attached.) (RS)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

Mildred R. Donoghue

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

LITERATURE CONNECTIONS IN SIX CURRENT MATH SERIES FOR GRADES K-2

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY
M. Donoghue

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.

ED 396 286

The National Council of Teachers of Mathematics has developed 13 standards for a strong math program. Standard #2 listed as Mathematics as Communication is concerned with students having many opportunities to clarify their thinking about math situations and ideas; being able to relate everyday language to math language; and realizing that reading, writing, discussing, and listening to mathematics are all vital parts of learning and using math.

Consequently when California in October 1994 announced the 12 math series officially adopted for its elementary math program, it was important to realize that six of these series listed titles of children's trade books useful for initiating, enriching, or supplementing lessons in estimation, numeration, fractions, geometry, whole number computations, measurement, etc. Those series are Quest 2000(Addison-Wesley), Mathland(Creative Publications), Anytime Math(Harcourt Brace), Math Every Day(D. C. Heath), Houghton Mifflin Math, and Scholastic Math Place. Therefore, a random selection of the titles of the trade books (described for those six series) was made to determine whether the books qualified as literature for classroom use in mathematics instruction. Only books appropriate for grades K-2 were considered.

Criteria used for determining any book's inclusion in the program were as follows: Its relevance to the math topics/concepts; its grade level appropriateness; its suitability for integrating across the curriculum; the accessibility of needed teaching materials to fully implement the usefulness of the story; and finally--and most significantly--the literary qualities of the prose. The last involved consulting such reference sources as two California Department of Education frameworks(Literature for Science and Mathematics-K-12; and Read to Me--Recommended Literature for Children Ages Two Through

CS215258

BEST COPY AVAILABLE

Seven) and/or the fifth edition of Best Books for Children: Preschool Through Grade Six published by R. R. Bowker in 1994.

Math Topics and Literary Books

A sample selection of 12 recommended literary books, covering at least 12 different math topics for the early grades(depending upon the particular series chosen)would include the following:

TOPIC: One-to-One Correspondence. Anno's Counting Book: An Adventure in Imagination(M. Anno, 1977). A number book in which the identical landscapes are used throughout; however, as seasons change, birds, trees, houses, and people are added.

TOPIC: Exploring Numbers. Ten, Nine, Eight(M. Bang, 1983). As a little girl is preparing to go to bed, the objects around her room are counted down from 10 to 1.

TOPIC: Sequencing. The Grouchy Ladybug(E. Carle, 1977). An aggressive ladybug challenges all the animals she meets, despite their size; (and the book pages vary in size with those of the insects and animals mentioned).

TOPIC: Number Sense. Ten Black Dots(D. Crews, 1986). Dots form a critical part of this counting book, such as "5 dots make buttons on a coat".

TOPIC: Counting. Moja Means One: A Swahili Counting Book. (M. Feelings, 1971). Each two-page spread provides a numeral from one to ten against a background of animal or village life in East Africa.

TOPIC: Fractions. The Doorbell Rang(P. Hutchins, 1986). Whenever the doorbell rings, another visitor arrives. This means that as more of Ma's cookies are shared, there will be fewer cookies for Sam and Victoria, unless Grandma arrives with a new batch..

TOPIC: Problem-Solving. Leo, the Late Bloomer(R. Kraus, 1971). Leo, a young tiger, cannot talk, read, write, draw, or even eat neatly. Father worries about the problem but Mother insists correctly that Leo still hasn't bloomed. One day happily Leo declares, 'I made it!.

TOPIC: Ordinal Numbers. Anansi the Spider: A Tale from the Ashanti. (G. McDermott, 1971). In West Africa when Anansi gets into trouble, his six sons are able to rescue him after many adventures.

TOPIC: Measurement. How Big Is a Foot?(R. Myller, 1991). The king decides to surprise his wife on her birthday by having a bed made for her(in the days when there were no beds). However, the carpenter makes a bed which is too small for the queen and is jailed until he reaches a solution.

TOPIC: Whole Number Operations. One Hundred Hungry Ants(E. Pinczes, 1993). While marching to the picnic grounds to get some food, 100 ants decide to change their line formation to order to get there more quickly as they are very hungry.

TOPIC: Comparing Numbers. From One to One Hundred(T. Sloat, 1991). Each wordless page offers opportunities to count to a certain number from one to ten and by decades to 100. The numerals and corresponding numbers of objects are cleverly hidden in the pictures.

TOPIC: Money/Estimation. A Chair for My Mother(V. Williams, 1982). A young girl, her mother, and grandmother collect coins in order to buy a new comfortable chair to replace the one destroyed in a fire.

Lesson Plan

A lesson plan integrating into the math curriculum the Williams' book listed above could proceed as follows for the second grade:

Objective: Students will identify the names and relative values of a penny, a nickel, a dime, and a quarter. Students will also practice estimation skills.

Materials: Small equal-sized jars of pennies, nickels, dimes, and quarters.
Chart paper for making a class graph.
One copy of A Chair for My Mother.

Procedure: 1. Have a class discussion about objects for which people might save money. Have the children relate stories of saving money for something special.
2. Read the story aloud.
3. As a class, talk about how much money a new chair might cost.
4. Hold up a jar filled with pennies and ask the students to estimate how many pennies there are in the jar.
5. Chart the students' answers and discuss their strategies for estimating.
6. As a class, empty the jar and count the pennies by two's.

Math Activities: 1. Compare the jars filled with nickels, dimes, and quarters. Estimate the amount of money in each jar. Compare estimates with actual counts.
2. Allow students in pairs to examine different coins.
3. Make an equivalency chart to demonstrate the relative value of each coin; e.g., 5 pennies=1 nickel; 2 nickels=1 dime, etc.

Another Useful Strategy

There are some literary selections from the primary grades which can also be used for math lessons in beginning intermediate classrooms. They fall into three main categories:

1. Selected picture books such as--
   Sea Squares(J. Hulme, 1991). A book of verse with an underwater theme in which children can visualize multiplication.
1. Selected non-fiction books such as--
   How Much Is A Million?(D. Schwartz, 1985). The concepts of million, billion, and trillion are explained by using images with which children can identify.
3. Selected fiction books such as--

Alexander Who Used to Be Rich Last Sunday(J. Viorst, 1978). A young boy receives a dollar gift and spends it recklessly penny by penny.

Bibliography of Children's Books Cited

Anno, M. Anno's Counting Book: An Adventure in Imagination(1977). New York: Harper.

Bang, M. Ten, Nine, Eight(1983). New York: Greenwillow.

Carle, E. The Grouchy Ladybug(1977). New York: Harper.

Crews, D. Ten Black Dots(1986). New York: Greenwillow.

Feelings, M. Moja Means One: A Swahili Counting Book. (1971). New York: Dial.

Hulme,J. Sea Squares(1991). Westport, CT: Hyperion.

Hutchins, P. The Doorbell Rang. (1986). New York: Greenwillow.

Kraus, R. Leo, the Late Bloomer.(1971). New York: Harper.

McDermott, G. Anansi the Spider: A Tale from the Ashanti.(1972), New York: Henry Holt.

Myller, R. How Big Is a Foot? (1991). New York: Dell.

Pinczes, E. One Hundred Hungry Ants (1993). New York: Houghton .

Schwartz, D. How Much Is a Million? (1985). New York: Lothrop.

Sloat, T. From One to One Hundred(1991). New York: Dutton.

Viorst, J. Alexander Who Used to Be Rich Last Sunday.(1978). New York: Macmillan.

Williams, V. A Chair for My Mother(1982) New York: Greenwillow.

Bibliography of Current Professional Books

Braddon, K., Hall, N. & Taylor, D. (1993). Math Through Children's Literature: Making the NCTM Standards Come Alive. Englewood, CO: Libraries Unlimited.

Burns, M. (1992). Math and Literature(K-3). Book One. Portsmouth, NH: Heinemann.

Sheffield, S. (1994). Math and Literature(K-3). Book Two. Portsmouth, NH:

Heinemann.
Thiessen, D. & Matthias, M. (Eds.).(1992). Wonderful World of Mathematics: A Critically Annotated List of Children's Books in Mathematics. Reston, VA: National Council of Teachers of Mathematics.
Whiten, D. & Wilde, S. (1992). Read Any Good Math Books Lately? Portsmouth, NH: Heinemann.
Whiten, D. & Wilde, S. (1995). It's the Story That Counts. Portsmouth, NH: Heinemann.

Mildred R. Donoghue
California State University, Fullerton
Fullerton, CA 92634